

## MONITORING WELL COMPLETION LOG GRN01-0182

<b>PROJECT</b>	UMTRA GROUND WATER	<b>NORTH COORD. (FT)</b>	238388.52	<b>DATE DRILLED</b>	06/10/2002 to 06/12/2002
<b>LOCATION</b>	GREEN RIVER, UT	<b>EAST COORD. (FT)</b>	2386337.03	<b>SURFACE ELEV. ( FT NGVD)</b>	4099.80
<b>SITE</b>	GREEN RIVER	<b>HOLE DEPTH (FT)</b>	162.00	<b>TOP OF CASING (FT)</b>	4101.52
<b>WELL NUMBER</b>	0182	<b>WELL DEPTH (FT)</b>	150.00	<b>MEAS. PT. ELEV. (FT)</b>	4101.52
				<b>SLOT SIZE (IN)</b>	0.020
				<b>BIT SIZE(S) (IN)</b>	8.0
		<b>WELL INSTALLATION</b>	<b>INTERVAL (FT)</b>	<b>DRILLING METHOD</b>	ROTASONIC
<b>SURFACE CASING:</b>				<b>SAMPLING METHOD</b>	ROTASONIC CORE
<b>BLANK CASING:</b>	4 in. PVC Sch 40	-1.72	to 140.0	<b>DATE DEVELOPED</b>	06/18/2002
<b>WELL SCREEN:</b>	4 in. 0.02 Slotted PVC	140.0	to 150.0	<b>WATER LEVEL (FT BTOC)</b>	19.67 on 06/18/2002
<b>SUMP/END CAP:</b>				<b>LOGGED BY</b>	Dayvault, R.
<b>SURFACE SEAL:</b>	Cement	0.0	to 2.0	<b>REMARKS</b>	Spent 1 day fishing for 4 pieces of casing. Set well in lower unit of Cedar Mountain Formation.
<b>GROUT:</b>	Bentonite	2.0	to 132.0		
<b>SEAL:</b>	Bentonite Pellets	132.0	to 137.0		
<b>UPPER PACK:</b>	20-40 Silica Sand	137.0	to 151.0		
<b>LOWER PACK:</b>	10-20 Silica Sand	151.0	to 162.0		

DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
							0-1.5 ft. SAND (SP); some pebbles, colluvial material derived from sandstone.
							1.5-5.0 ft. DAKOTA SANDSTONE: 1.5-4.0 ft. MUDSTONE; grayish friable weathered shale to mudstone.
5	4095						4.0-5.0 ft. SHALE; friable dark gray, Fe-stained. (basal conglomerate of Dakota not present here).
							5.0-162.0 ft. CEDAR MOUNTAIN FORMATION: 5.0-7.0 ft. MUDSTONE/SILTSTONE; friable olive gray.
							7.0-12.0 ft. SHALE; gray friable, some Fe-staining.
10	4090						
							12.0-30.0 ft. SILTSTONE; indurated olive greenish gray shaley siltstone.
15	4085						15.0-17.5 ft. friable gray shaley siltstone, Fe-staining prominent in siltstone from 16.0-16.5 ft.
20	4080						17.5-30.0 ft. siltstone contains calcareous nodules, series of layers containing calcareous concretions, mottled with pyrite and voids containing calcite, dog tooth, crystals, nodules often greater than 6.0" - drilled some with water - fines washout. Drilled without water - shale/mudstone is preserved. All matrix supporting nodules is calcareous.
	4075						

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
30	4070						30.0-41.5 ft. SILTY SHALE; no nodules.
35	4065						35.0-41.5 more calcareous nodules with pyrite.
40	4060						41.5-43.0 ft. SANDSTONE; fine grained, light gray (N7), slightly calcareous.
45	4055						43.0-56.0 ft. SILTSTONE; light gray to greenish gray siltstone with clays, some very fine pyrite crystals associated with, shaley lenses. Dark greenish gray (5 GY 4/1), calcareous nodules intermittent.
50	4050						
55	4045						56.0-65.0 SANDSTONE; hard zone composed of calcareous

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**WELL NUMBER** 0182

**SITE** GREEN RIVER

**DATES DRILLED** 06/10/2002 to 06/12/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
60	4040						nodules and associated fine grained light gray sandstone, partings with drusy calcite crystals; drilled with water - not calcareous.
65	4035						
70	4030						65.0-74.0 ft. MUDSTONE; silty calcareous mudstone to siltstone with pyrite as isolated crystals, blebs and clusters to 8mm in tiny octahedrons, mudstone contains numerous rounded lithics to 2 mm.
75	4025						74.0-75.5 ft. SHALE; interbedded with limestone - micritic with shale partings, light gray (5G 6/1), tiny pyrite crystals, vertical veins to 1.0 mm, contains calcite and pyrite.
80	4020						75.5-91.5 ft. SILTSTONE; indurated greenish gray siltstone to shale (5G 6/1) containing rounded clasts to 1 cm, pyrite, veins of calcite 0.5mm thick. Calcareous to 83.0 ft, noncalcareous to 91.5 ft. (except for calcite veins). Nodular zone from 81.5 to 83.0 ft.
85	4015						

← Bentonite

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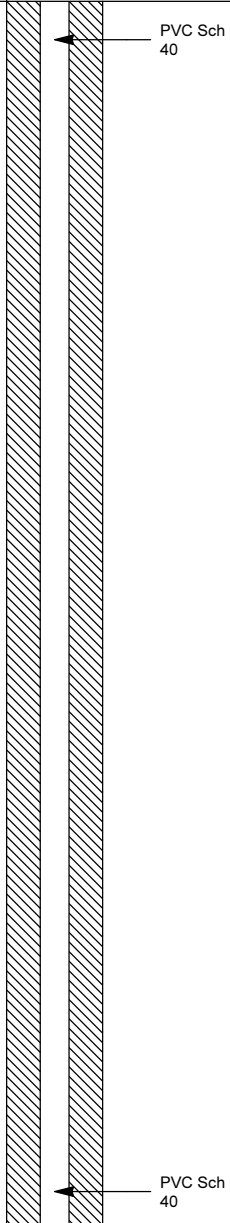
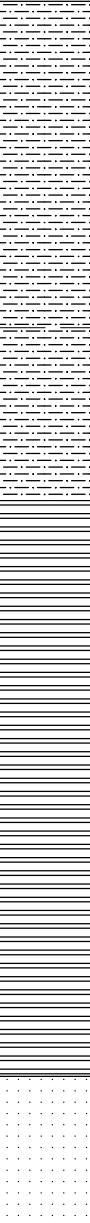


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**DATES DRILLED** 06/10/2002 to 06/12/2002

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DEPTH (FT BGL)	ELEV. (FT NGVD)	BLOW COUNTS	SAMPLE ID.	EXTENT	WELL DIAGRAM	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
90	4010				 <p>PVC Sch 40</p>		<p>@91.5 ft. switched to 4.0" in diameter core, some material washed out, probably continued siltstone, as above.</p>
95	4005						<p>@97.5 ft. clayey fraction, light pink gray (5YR 8/1).</p>
100	4000						<p>97.5-102.0 ft. SILTSTONE; calcareous nodules with very finely disseminated pyrite.</p>
105	3995						<p>102.0-117.0 ft. SHALE; mauve color - mudstone and siltstone, color is (5R 4/2) and dark gray (N3), calcareous nodules, small areas (up to 1 x 3 cm) are light greenish gray included in mauve host rock that probably represents less oxidized regions. @109.0ft layer is no longer calcareous.</p>
110	3990						
115	3985				 <p>PVC Sch 40</p>		<p>117.0-158.5 ft. SANDSTONE; very light gray (N8) with slight greenish cast fine grained, slightly calcareous, possible crossbedding, becomes coarser at 123.0 and 124.0 ft.</p>
120	3980						

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125	3975						124.0-137.0 ft. color change, mauve colored mud with dark gray chips of shale to light gray fragments of fine grained sandstone. Becomes calcareous at near 137.0 ft., and from 132.0 to 137.0 ft. color changes to light gray
130	3970						
135	3965						
					Bentonite Pellets		
140	3960				20-40 Silica Sand		137.0-158.5 ft. prominent fine grained sandstone, very light gray (N8), with slight greenish cast, calcareous but with good porosity, pyrite common - some in veinlets, friable, rounded quartz grains, "sponge" texture.
145	3955				0.020" Slotted PVC		
150	3950						

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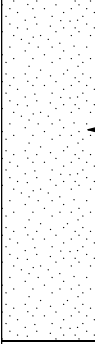
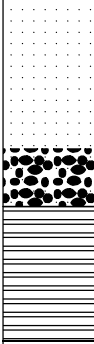
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155	3945				 <p>10-20 Silica Sand</p>		157.0-158.0 ft. becomes conglomeratic and arkosic with pebbles of dark chert to (up to 2 cm) mildly calcareous, white to very light gray (N9 to N8).
160	3940						158.5-162.0 ft. SHALE; Greenish gray shale (5G 6/1), noncalcareous.
165	3935						Total Depth 162.0 ft.
170	3930						
175	3925						
180	3920						
	3915						

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